

# THE POWER OF DATA IN HARTFORD PRESCHOOL PROGRAMS

Significantly improving early childhood instructional  
practices through the standardized use of data



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A citywide effort of Hartford's Department of Families, Children, Youth and Recreation Division for Young Children

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“Our youngest children are our greatest resource for the future and deserve equitable access to high-quality, enriching and engaging educational experiences.

It is our collective responsibility to use data on an ongoing basis to ensure that learners are consistently experiencing effective instructional practices and that we are achieving great child outcomes with every learner.”

Kathleen E. England, Chief Academic Officer, Hartford Public Schools

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“Using the data that we now can access helps me so much. It specifically helps me see how we can improve and become the highest-quality program possible.

The data I get allows us to accurately measure how we’re doing. In my mind, this data-driven, decision-making approach is a major leap well into the 21st century.”

Emilie Montgomery, Director, CRT

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“We truly support the data-driven approach the City offers. It strengthens children’s kindergarten readiness skills; focuses teachers on intentionality; makes teachers more confident because they plan better with it; and, rather than teach to tasks, they teach to encourage growth.”

Christy Gademsky, Director, Trinity

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## Why data is critical to great outcomes

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All human behaviors, from workforce abilities to social skills build on capacities developed within early childhood, beginning at birth. The early development of cognitive skills, emotional well-being, social competence and robust physical/mental health is the foundation for school and lifelong achievements. These abilities are the critical prerequisites for economic productivity and responsible citizenship throughout life.

I am delighted to report that Hartford families now have an incredible array of school choices for their children. Community-based early childhood programs and magnet or open choice schools offer unique themes, state-of-the-art facilities, highly skilled educators and quality learning experiences essential to school and lifetime successes. I am especially proud of our efforts to increase the use of data to improve the effectiveness of our instructional practices and child outcomes. No other City in the State has utilized data to the extent and intensity as Hartford and no other municipality verifies the accuracy of data through the use of external monitors.

The futures of our children are too important for us to ignore the research reiterating the significance of high-quality early learning experiences to subsequent school success. We know that great child outcomes require great teaching practices and that data guides best practices and choices. Teachers and families need child performance data to ensure they are supporting each child to achieve critical learning standards; administrators need data to improve the overall quality of instruction and school climate; stakeholders need data to make informed choices; and policymakers need data to make smart investments.

I would like to commend Jane Crowell, Assistant Director for the Department of Families, Children, Youth and Recreation—Division for Young Children for her leadership in this initiative as well as the Capitol Region Education Council and Metro Hartford Information Services (MHIS) for the development of a citywide Early Childhood Data System that provides transparent and easily accessible data to our educators, families, stakeholders and policymakers. Without this resource, our efforts would be severely compromised and Hartford would not be recognized by national, state and local entities for its exemplary work on behalf of our young children and their families. I appreciate the support from the National League of Cities related to establishing an educational alignment but most importantly, I want to congratulate our Hartford educators for their dedication and commitment to data-driven practices.

José Colón-Rivas

Director, Department of Families, Children, Youth and Recreation





## 3 AREAS OF EMPHASIS

quality opportunities skilled workforce data-driven decision-making



# HARNESSING THE POWER OF DATA

to favorably impact teaching and learning in Hartford's preschool classrooms

The City of Hartford has made a broad-based, strategic commitment to provide high-quality early education to its young children. While other municipalities implement efforts to improve child outcomes, Hartford stands alone as a city that has dedicated unprecedented resources towards improving instructional practices that in turn, yield increased child performance measures. The intensity and frequency of data use in its preschool classrooms extends far beyond those of other cities throughout the state. In addition, Hartford is the only city to incorporate an external monitoring component focused on instructional practices. This endeavor has been implemented over several years in order to ensure data is reliable and valid. Three dynamic and inter-related areas of emphasis comprise this initiative:

- **Quality Early Childhood opportunities** available to all young children based on State Early Learning and Development Standards aligned to Connecticut Common Core Standards.
- **Highly Skilled Workforce** educated and supported with research-based professional development opportunities.
- **Data-driven decision-making practices** that promote effective instructional strategies, inform professional development priorities, guide fiscal allocations and improve child outcomes.

## The backing of scientifically supported evidence

Numerous brain development studies underscore the importance and efficacy of high quality early learning experiences. Additional research reiterates the lifelong benefits associated with high quality early learning experiences such as higher income earnings as adults; more fathers actively engaged in raising their children; increased car and home ownership; fewer criminal arrests and less

“The City of Hartford and its partners are effectively using data to help develop programs and policies on which to build a more comprehensive system of early learning. Hartford serves as a model of how city leaders can work with stakeholders to collect and use data to improve quality, support educators, and engage families in order to ensure all children enter kindergarten ready to succeed and develop to their full potential during the school year.”

Tonya Rucker, PhD, Program Manager, Early Childhood  
The National League of Cities  
Institute for Youth, Education, and Families

“One child who came to us had excellent pre-K academic skills but behavioral and emotional issues—so we worked on his social skills and he developed tremendously by the time he headed into kindergarten. Data tracking really helped in this case.”

Donna Costello, Preschool Teacher, CREC Autism Program

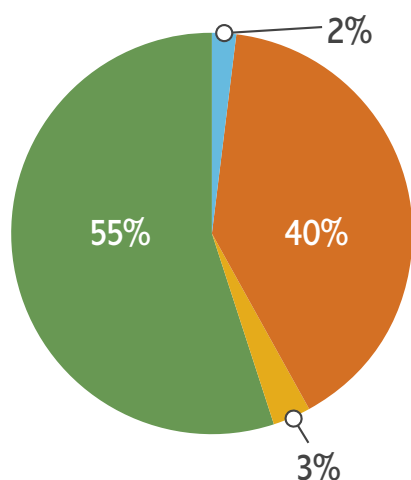
time spent in prison, to name a few. Furthermore, more children—particularly those most at risk—are prepared for kindergarten and subsequent grade success with greater basic achievement scores, are less likely to need special education services, and have higher on-time graduation rates.

As research studies focus on school success and failure, the potential impact of high quality early childhood programs on subsequent achievement is well documented. In particular, research confirms that low-income African American and Latino children, who are often educationally underserved, can especially benefit from high quality early learning experiences provided by teachers with the professional training and knowledge of how young children learn. Their use of effective teaching methodology can transform early failures into lifetime successes.

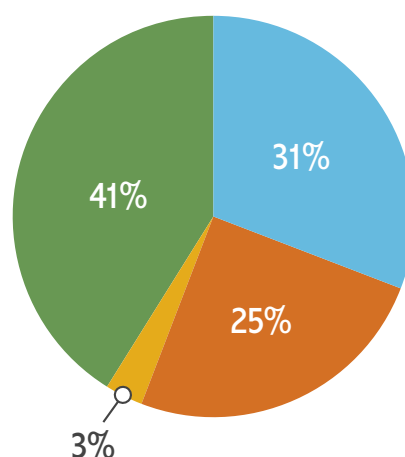
### Measuring and tracking efficacy

However, many experts in the field struggle to agree on what constitutes a high-quality early childhood program. The most commonly referenced indicators are national accreditation, state licensure, environmental rating scale measures or teacher credential levels. In addition to these indicators, through the leadership of the Department of Families, Children, Youth and Recreation Division for Young Children, Hartford providers believe that great child outcomes require great instructional practices. We believe that our children are entitled to nothing less. Therefore, the Division for Young Children has spearheaded a citywide coordinated

Race & Ethnicity of Enrolled Children



Race & Ethnicity of Instructional Staff



● White [not Hispanic] ● Black [not Hispanic] ● Other [not Hispanic] ● Hispanic

professional development initiative focused on evidence-based instructional methods that utilize data to inform teaching strategies proven to be highly effective with young children.

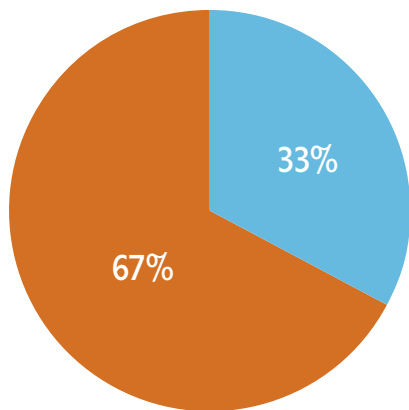
Approximately eight years ago, the Division for Young Children engaged in Results Based Accountability (RBA) training and convened administrators serving Hartford young children in school or center-based programs to collectively discuss how school readiness investments impact child outcomes. Providers unanimously agreed that the services their programs offered were having a profound impact on positive child outcomes. However, when asked for the data or evidence to support these beliefs, they realized that various curricula were being implemented throughout the city, each combined with unique assessment instruments, thereby yielding a hodgepodge of data without a uniform measure to capture citywide impact.

As a result, since the state required all school readiness programs to provide instructional practices based on the CT Preschool Assessment and Curriculum Frameworks, Hartford preschool administrators agreed that programs would uniformly report child progress measures based on the Preschool Assessment Frameworks (PAF) to the Division for Young Children. Simply stated, administrators believed that by improving instructional practices aligned to state early learning standards, child outcomes would improve and that by collecting uniform child progress measures, Hartford could report impact measures.

“Reporting data immediately helps me identify core groups of children for whom I can plan specific instruction. It has had a positive impact on organizing my thought processes for outliers—children both who have fallen behind and those who are above their developmental level. It has made me mindful of who is above and below the norm and what needs to be done for each.”

Jackie Lilly, Preschool Teacher,  
Capitol Child Development Center

Percentage of Dual Language Learners

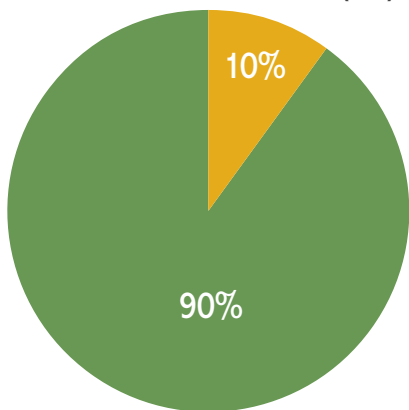


Yes [n value=399]



No [n value=1017]

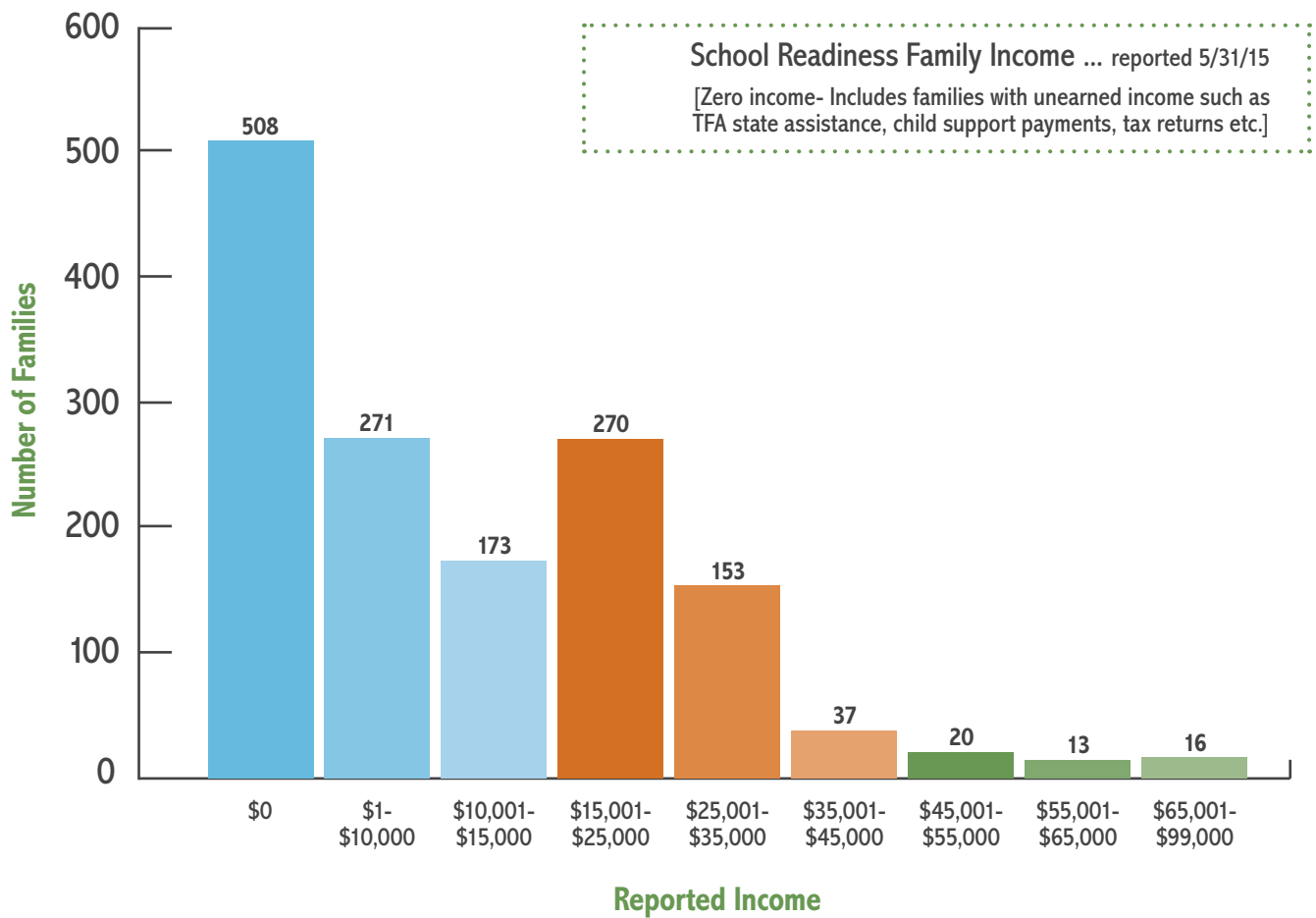
Percentage of Children with Individual Education Plans (IEP)



Yes [n value=121]



No [n value=1264]



## Uplifting accountability in the preschool environment

While the practice of using data to favorably influence curriculum trends and heighten accountability related to student outcomes is common in the field of education, it is relatively new to most early childhood professionals.

The decision to focus on improving instructional practices meant holding programs accountable for practices that transcend beyond licensing, accreditation or funding source requirements such as School Readiness, Child Day Care or Head Start. For example, a program could meet School Readiness, licensing and accreditation requirements and still not address “how” young children learn based on current research and how to implement changes in their instructional practices.

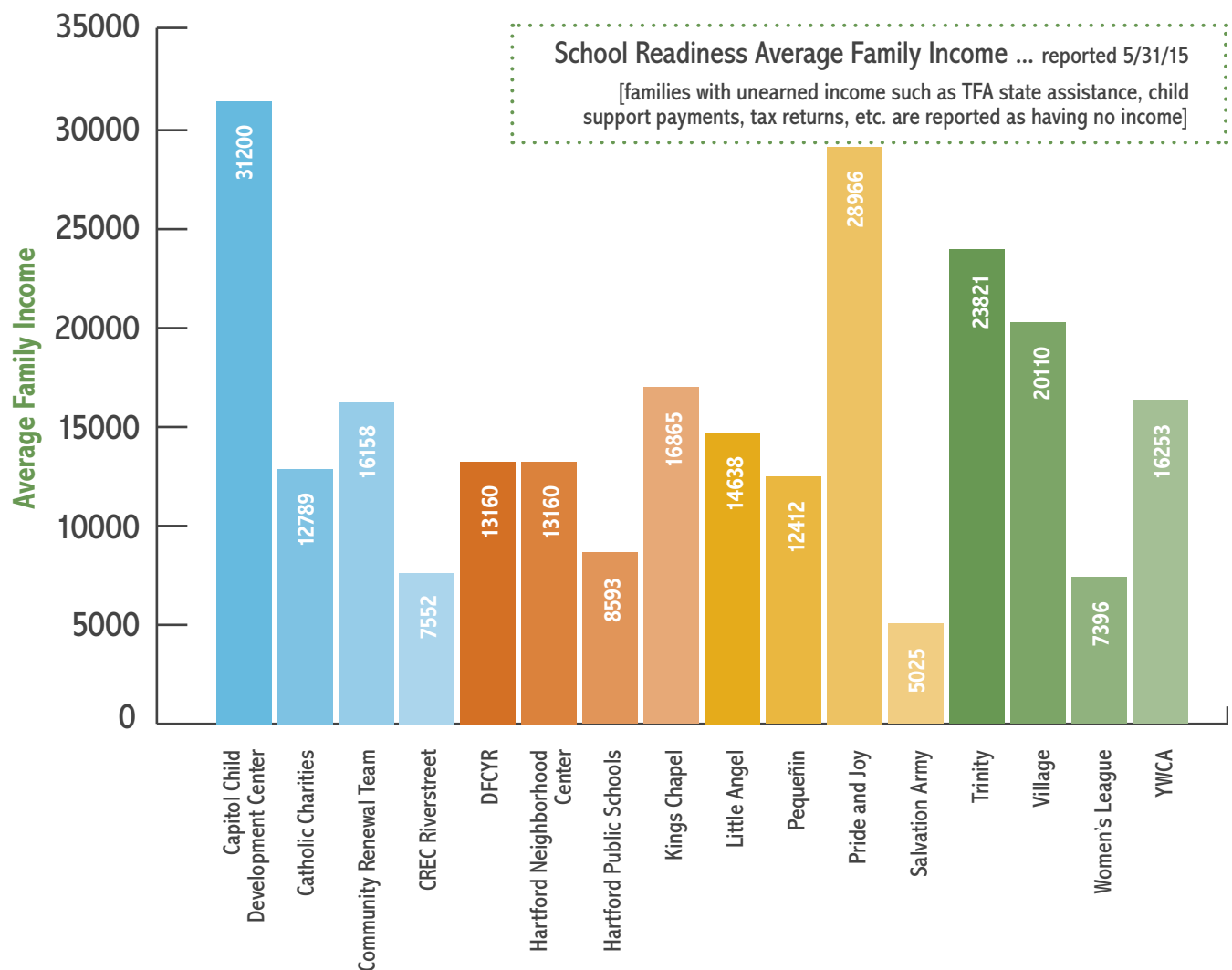
In response, the Division for Young Children recognized the need for an evolving and complex process in order to improve instructional practices and shift away from the preponderance of activity-driven or didactic instructional practices to standard-driven, higher-order thinking teaching strategies guided by data. The Division then became committed to supporting programs and staff over a multi-year period of time to facilitate these critical changes—changes that would maximize children’s learning potential. We knew full well that the changes we sought would take time and that a tremendous allocation of resources would need to be provided to support preschool staff during the change process.





# CLASSROOM MONITORING

measures quality validates accuracy substantiates compliance



## A well-integrated professional development network

Hartford's citywide professional development initiative includes an Instructional Leaders Institute; an Administrator's Forum; an Early Childhood Network; a dedicated WikiSpace; Peer Learning Groups; extensive onsite coaching support for Instructional Leaders; a data system exclusively developed by the City's Metro Hartford Information Services (MHIS) as well as classroom monitoring that:

- 1... Measures the quality of instructional practices.
- 2... Validates the accuracy of child assessment measures.
- 3... Substantiates compliance with requirements.

In the absence of monitoring visits, it was discovered that classroom teachers, instructional leaders and administrators did not benefit from an objective measure to assess accuracy and guide improved instructional practices. Furthermore, it was found that citywide data profiles were grossly misleading due to inaccurate assessment measures. This additional level of monitoring support does not exist in any other municipality and was purposely provided as an innovative way to ensure that programs are adequately supported and that citywide data is reliable.



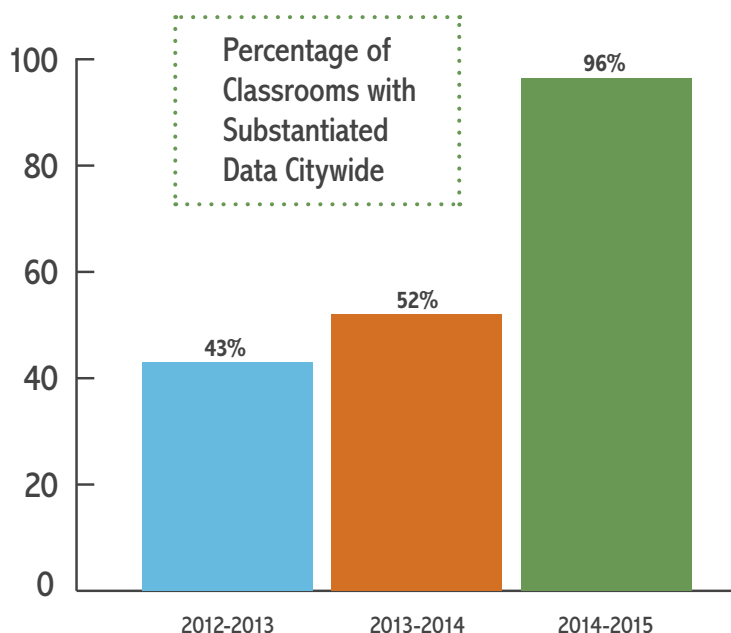
Unquestionably, the instructional practices of Hartford school readiness providers and child outcomes have improved. We have gained deep insight into the fact that there are many variables that influence child progress. Effective instructional practices focus on the development of the whole child and take into consideration child interest and the family/cultural context. They are based on identifying what the child is ready to do with support, while strengthening what the child is able to do independently across all of the inter-related learning domains.

Tailoring instructional support to meet the needs of each child increases the likelihood that children will achieve success in subsequent school grades. These teaching practices focus on the current level where each student resides. When implemented correctly and appropriately, they facilitate the healthy development and education of young children.

Nevertheless, one important challenge for the Division was to secure sufficient funds to cover the cost of these essential supports over a multi-year period of time, particularly because the needed amount exceeded the amount of grant funds available from the state. Fortunately, city leaders have approved the allocation of fiscal resources to this unprecedented initiative because they are committed to all of Hartford's young children and they understand and accept the fact that early learning experiences generate far greater cost benefits than later grade investments—and they have a profound impact on overall school success.

“The data-driven approach allows me to see at a glance where our children stand developmentally and the growth and developmental continuum our teachers are moving along—and the kind of support they can most benefit from.”

Emilie Montgomery, Director, CRT



While the Division for Young Children analyzed child performance data in the beginning years of this initiative, we questioned the validity of our initial findings. For example, it was not uncommon for every child in a classroom to be assessed at the same level on every learning standard even though we know children perform at varying levels. As a result, we implemented an external monitoring component to substantiate the data. Monitors, graciously supported by City dollars, visit classrooms to verify the accuracy of reported child measures and to rate the quality of the instructional practices based on a rubric developed by the Division in concert with early childhood experts. From this, we found that less than half of the classrooms initially reported accurate child assessment measures. However, over the course of several years, the percentage of substantiated child data has improved significantly due to the addition of monitors.

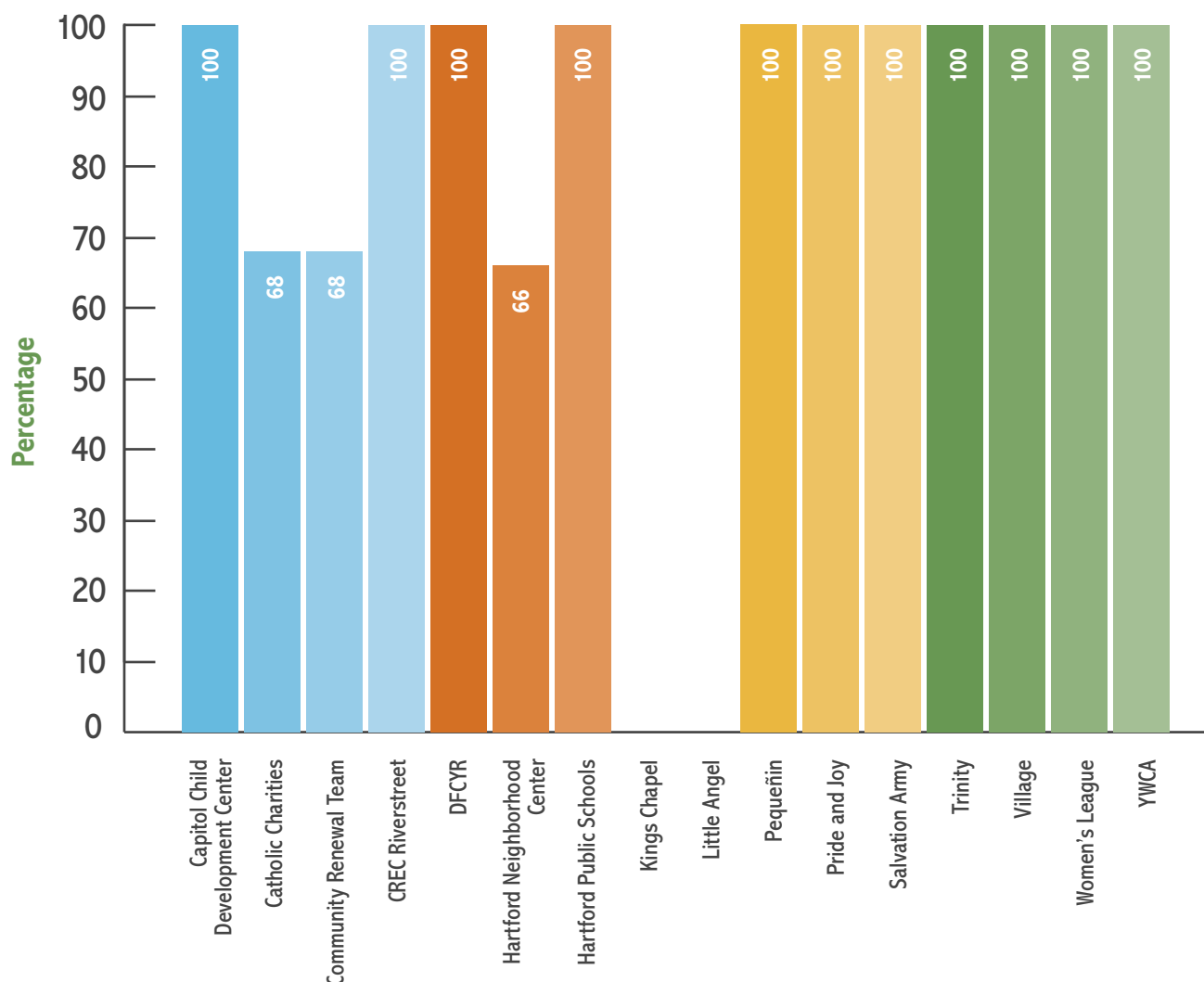


“As far as a child development tool, I think teachers find the data useful because it offers real-life observation within the school day rather than taking students away for testing or specialized learning.”

Sharon Josie,  
Instructional Leader,  
Pride & Joy

The Division and Hartford preschool providers remain grateful for the exemplary local, national and state leadership demonstrated by stakeholders throughout this process. Most notably, the Division for Young Children continues to successfully engage leadership at all levels and has utilized current scientific research to align the instructional practices among its full spectrum of preschool to third grade educators. Hartford’s backing by a broad base of visionary leaders, enlightened funders, committed partners and engaged stakeholders has created a landscape ripe for the development of a coordinated, seamless preschool to third grade early childhood system.

Percentage of Classrooms with Substantiated Data ... reported 5/31/15



## Partnering for a more comprehensive impact

Besides the Division for Young Children, Hartford's approach to utilizing Early Childhood data was developed in partnership with Metro Hartford Information Services (MHIS) and the Capitol Region Education Council (CREC). Our data collection efforts identified five sequential priorities:

- 1 Provide a tool for teachers to improve their instructional practices.**
- 2 Inform administrators of program improvements.**
- 3 Guide citywide professional development priorities.**
- 4 Ensure wise fiscal allocations.**
- 5 Electronically transfer child specific data to receiving school districts, with parent consent.**

After three years of development and refinement, four of the five priorities have been achieved with teachers, administrators and other key stakeholders implementing systemic changes in pedagogy, quality improvements, citywide professional development opportunities and policy decisions regarding funding.

Teachers review child-specific and classroom data on an ongoing basis. They use Cycles of Intentional Teaching practices that incorporate child observations; formative assessments; planning learning experiences; and implementing effective instructional practices throughout the day.

In addition to child and classroom data, the access to our data enables administrators and instructional leaders to view multiple classrooms, including all classrooms in the agency or site. On a citywide level, the Division is able to view data by child, classroom, site, agency, or all agencies in order to generate citywide profiles. While the data system currently has the capacity to electronically transfer data to schools for entering kindergartners, this phase has not yet been implemented. Since the primary reasons for transferring this data was to guide classroom assignments and instruction, until school educators have a solid understanding of the Preschool Assessment measures, these goals cannot be achieved. As a component of the City's Preschool to Grade 3 Alignment initiative, school district teachers and administrators will participate in professional development training to build this understanding.

“Using the data has made teachers more accountable in their classrooms by improving their understanding of child development. The new information we now have forces a lot of reflection on improvements in the classroom and in program administration. For instance, if we detect low literacy, we focus more professional development attention around how to address this problem most effectively. We now look much closer at what we're doing and how well we're doing it. The data informs not just the classroom but also the program.”

Meredith Martineau,  
Instructional Leader, YWCA



# DEVELOPMENT PRIORITIES

teacher's tools program improvements professional training  
wise fiscal allocations

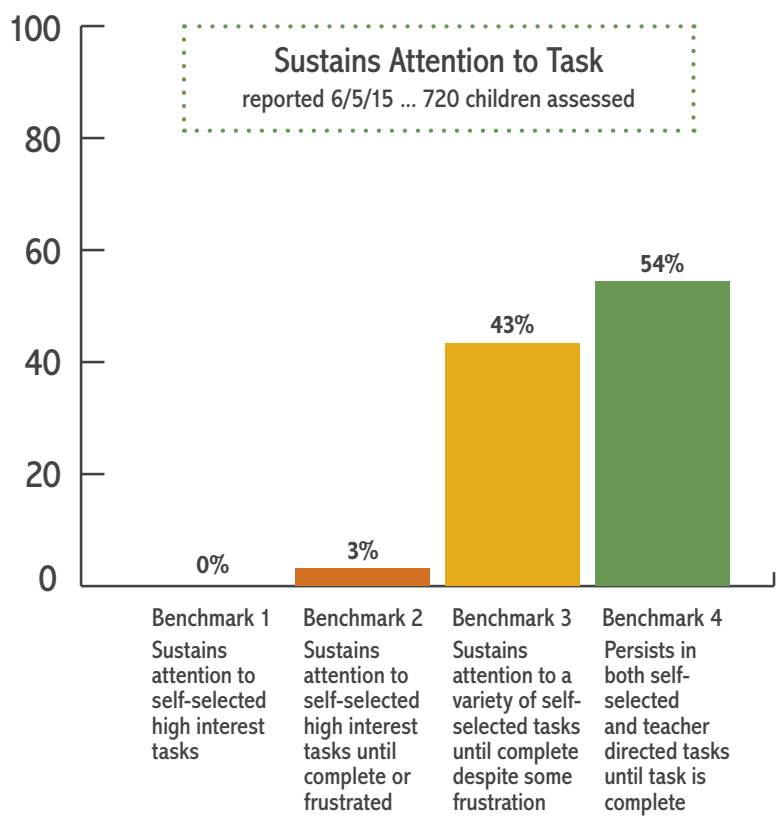


# CITY OF HARTFORD

## Child assessment data as measured by the Connecticut Preschool Assessment Framework.

Hartford school readiness programs uniformly teach to the CT Early Learning and Development Standards and utilize the CT Preschool Assessment Framework (PAF) to measure child progress. As examples of the data reports compiled, the following charts represent seven of the 30 PAF standards to illustrate performance levels for the children throughout the City who will be attending kindergarten next fall.

Each standard includes four progressive developmental levels associated with that standard. Benchmark 1 reflects the lowest level of performance while benchmark 4 represents children performing at the highest level. Benchmark levels 3 and 4 are most appropriate for children about to enter kindergarten. This data has been substantiated by monitors as accurate and reliable. While these assessments do not measure “readiness”, they measure child progress over time and it is important to recognize that there is great variances in development among children.

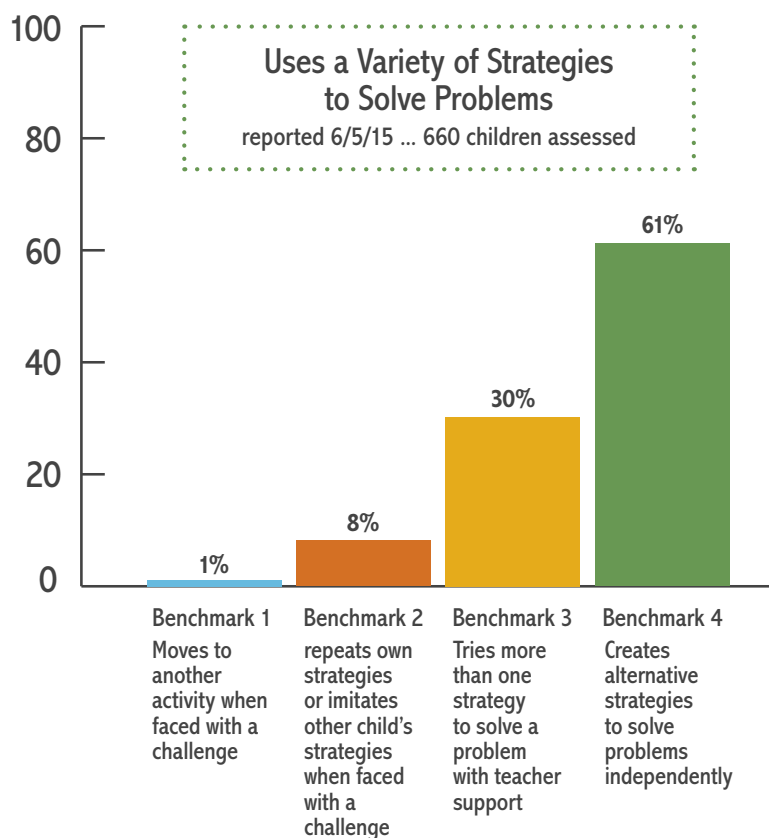
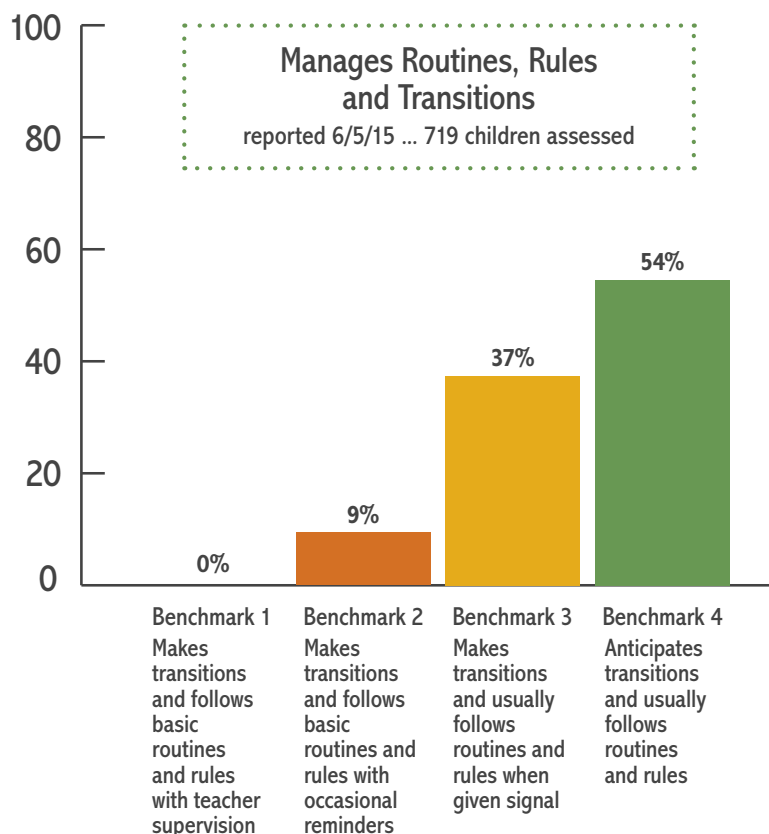


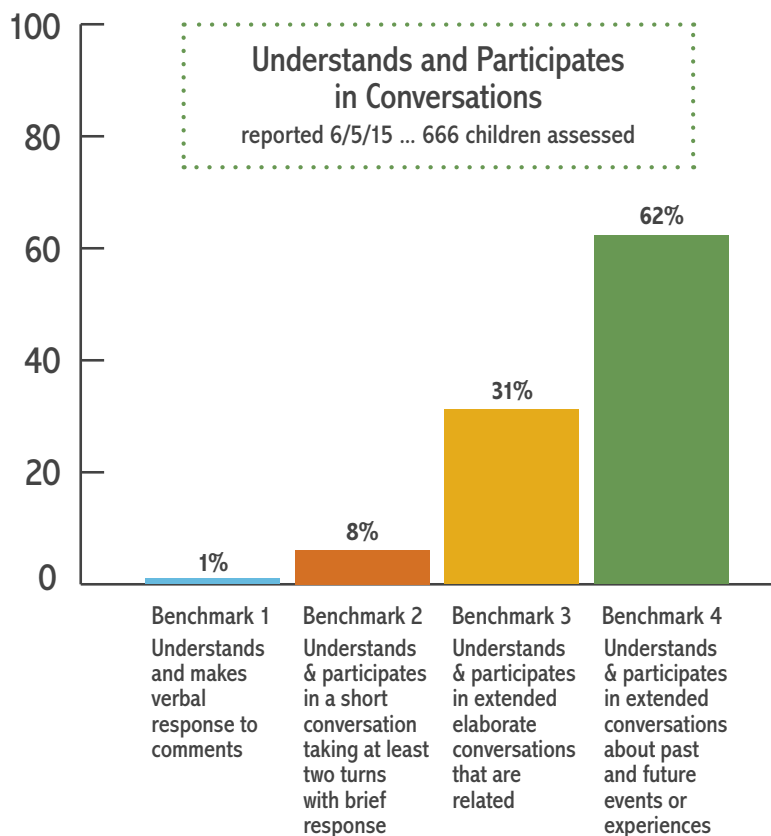
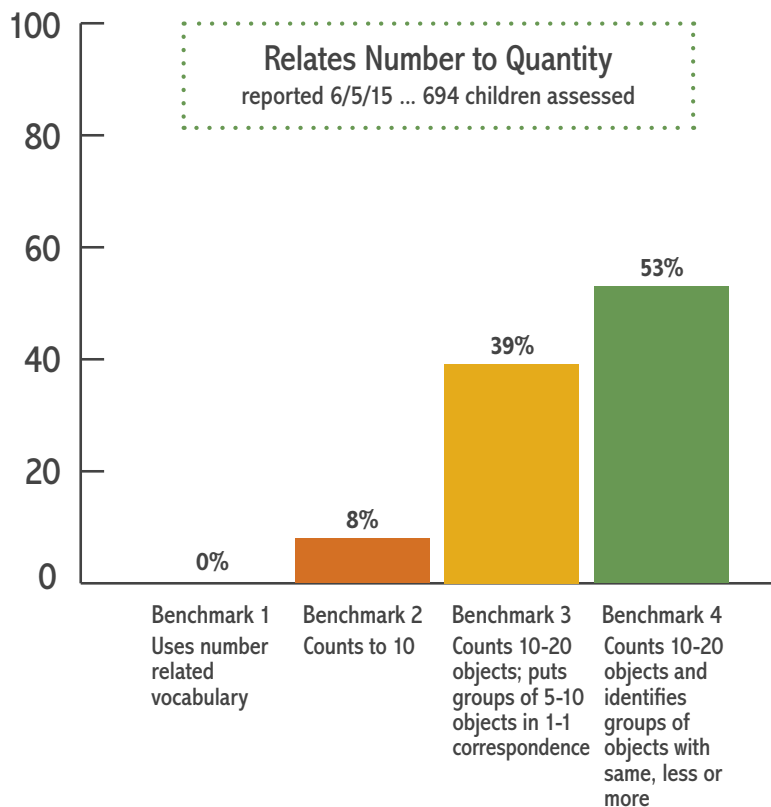
“Investing in human capital formation early in the life cycle is likely to be more efficient than mitigating disadvantages at older ages. Indeed, research on attempts to provide remedial human capital investments for adults in the form of job training, for example, have often concluded that these have been largely unsuccessful.”

Paul Heckman, Associate Dean & Professor, University of California School of Education and Nobel-prize winning economist

Working with children through the use of Hartford's Early Childhood Data System allows teachers to concentrate on clustering—and on moving children into the next higher- level cluster. They use print-outs of all standards and of where children are in regard to these standards. This is helpful in conferring with parents who see for themselves exactly where their children stand."

Mahnaz Mondanipour, Director, Pride & Joy





"I find the data easy to use. It's very straightforward. Some teachers who are not technologically inclined find it a little difficult to login and to keep up with timely reports. But we help them by printing hard copies so it's not really a problem. All of our teachers find the data useful in planning what they should be teaching for the week.

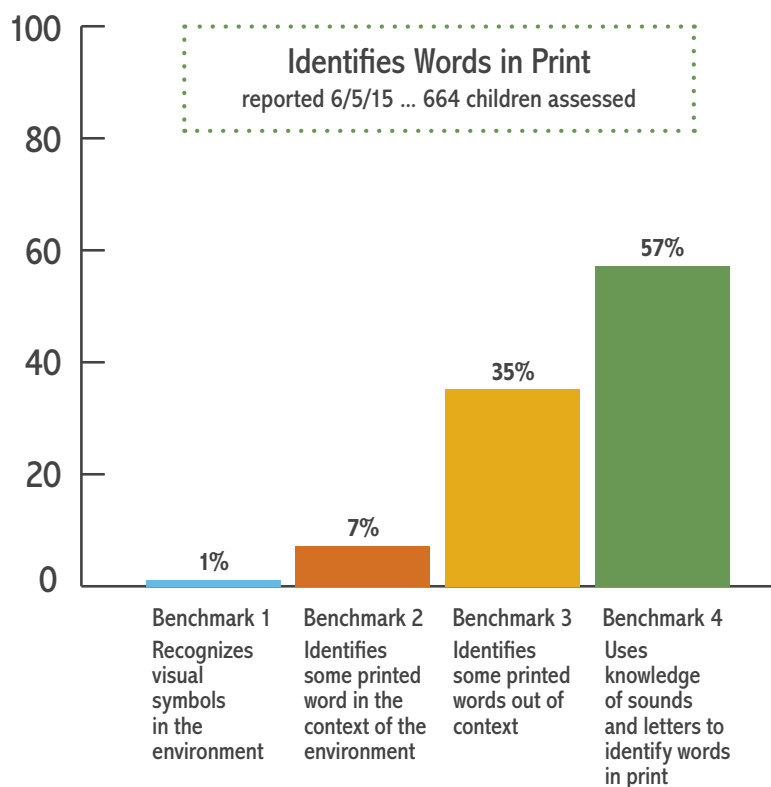
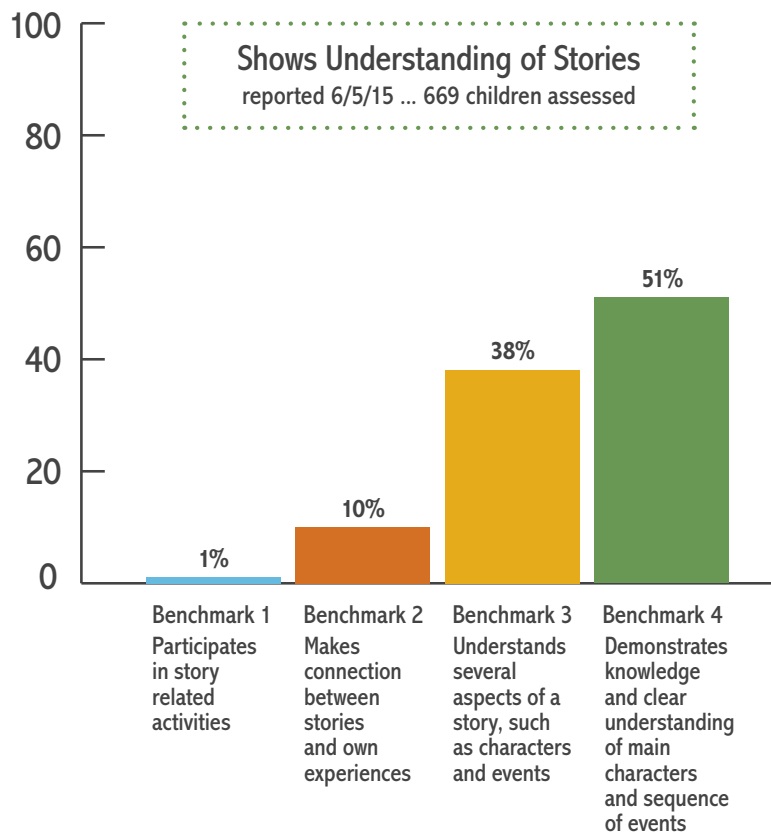
Teachers now teach at the zone where the children need to be taught. Before using the data that is now available to us, sometimes our teachers were teaching at levels either too low or too high."

Bea Soundara, Instructional Leader, Hartford Neighborhood Centers



“I find the data to be very user friendly. But what’s really beneficial to me are Hartford’s Division for Young Children’s Instructional Leaders Meetings where their staff provides tremendous professional development programs. The on-site coaching of the Division provides practical support that makes sure I am on track toward attaining my professional goals.”

Sharon Josie, Instructional Leader, Pride & Joy



## Cycles of Intentional Teaching: Monitoring Visit Rubric

Criteria	1 Beginning	2 Developing	3 Proficient	4 Exemplary
<b>Organized data collection system with required documentation in place</b>	Systematic documentation is not evident or is in initial organizational state.	A systematic data collection system is in place with some evidence collected for one or two implemented standards.	A systematic data collection system is in place with documented evidence for several of the implemented standards.	A systematic data collection is in place with sufficient documented evidence for all implemented standards.
<b>Observations</b>	Observations recorded are generic.	Some observations are objective and measurable.	Most observations are objective and measurable.	Observations are objective and measurable.
<b>Observations support standard/benchmark determination</b>	Evidence is unrelated to the targeted standard/benchmarks.	Some evidence is related to the targeted standard/benchmark and is reflective of the child's performance.	A noticeable amount of evidence is related to the targeted standard/benchmark and is reflective of the child's performance.	A substantial amount of evidence is related to the targeted standard/benchmark and is reflective of the child's performance.
<b>Evidence of assessment planning</b>	The LEP or Assessment Planning form is not available or lacks planning specific to standards being assessed.	The LEP/Assessment Planning form reflects activities directly correlated to the standard(s) being assessed.	The LEP/Assessment Planning Form reflects intentionally planned teaching strategies and embedded experiences that correlate to a few implemented PAF standards.	The LEP/Assessment Planning Form reflects intentionally planned teaching strategies aligned to the benchmarks and references embedded experiences correlated to all PAF standards.
<b>Evidence of ongoing planning guided by standards</b>	The LEP reflects embedded experiences and strategies leading to higher order thinking directly related to the PAF.	The LEP reflects embedded experiences and practices directly related to PAF standards with evidence of differentiated instruction designed to targeted benchmarks.	The LEP reflects embedded experiences and practices directly related to ELDS with evidence of differentiated instruction designed to targeted benchmarks.	The LEP reflects experiences directly related to ELDS with evidence of individualized/small group Tier 2 and Tier 3 supports as needed.
<b>Implementation</b>	There is minimal evidence of implementation of teaching support as planned in the LEP.	Some staff shows evidence of implementing embedded instructional strategies as planned in the LEP.	Most staff consistently employs embedded teaching strategies to support learners aligned to targeted benchmarks as described in the LEP.	All staff consistently employ strategies to support learners and extend experiences to ensure ongoing learning. Scaffolding and differentiation are evident, as planned in the LEP.
<b>Evidence of data-driven decision making</b>	Planning reflects the needs of children in the classroom based on PAF data.	Planning and implementation reflect consideration of the needs of children in the classroom based on PAF data. (Tier 1 supports)	There is evidence of differentiated instruction based on PAF data. There is planned progress monitoring for these children. (Tier 2 supports)	There is evidence of more intensive planned support, with clearly defined goals, for children at risk. There is planned and frequent progress monitoring for these children. (Tier 3 supports)

“Data from Hartford’s Division for Young Children has helped me concentrate on where individual children need attention in order to move forward. Now I can provide intense instruction to help every child get to the next level of development.”

Donna Costello, Preschool Teacher, CREC Autism Program

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“My program really appreciates the City’s support. It is so valuable and it really helps kids enter kindergarten successfully.”

Sharon Josie, Instructional Leader, Pride & Joy

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“What is perhaps the greatest aspect of the data implementation is the personal coaching and mentoring provided by the DFCYR’s Division for Young Children. Data works best for teachers when teachers are fully trained and supported in the practical use of it.”

Christy Gademsky, Director, Trinity



PEDRO E. SEGARRA  
MAYOR

**Department of Families, Children, Youth and Recreation**  
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